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ABSTRACTS



A107 How do conflicting values on ecosystem-based adaptation interact in decision-making?

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Decisions on how to adapt to climate change depend on decision-makers' knowledge and values. As decision arenas are often composed of stakeholders with conflicting worldviews, decision outcomes depend on power relationships, formal and informal rules and governance arrangements around decision processes. In the Peruvian Andes, several programs for adaptation to climate change aim at improving water supply during droughts, perceived to be increasingly severe and frequent, and implement adaptation options based on ecosystems or on technology and infrastructure such as dams.

This study analyzes adaptation options for adaptation and water management in the Apurimac region in Peru. We propose a critical analysis of decision contexts on adaptation and water management and the implications of adaptation options on ecosystem services and equity. We identify different doctrines and preferences for technological or ecosystem-based options and relate them to stakeholder worldviews. We also explore whether some options are favored by decision rules and power relations.

We analyzed existing adaptation projects and reviewed the literature related to ecosystem management and infrastructure for water management in the Andes. We conducted 25 semi-structured interviews to explore decision-making process. We applied a Q-methodology questionnaire to 72 stakeholders to identify different views and discourses on adaptation and water management. We identified four contrasting discourses with different priorities given to ecosystems vs infrastructure and different visions on equity and the role of government, communities and the private sector.

Adaptation follows different pathways in a gradient between two contrasting stereotyped alternatives. One alternative focuses on ecosystem management to restore and protect the ecosystem services of myriad wetland ecosystems within mountain landscapes, but seems to be rarely considered by decision makers. The other alternative relies on technology and infrastructure through dam building to substitute technological water regulation for hydrological ecosystem services. The preferences of stakeholders for adaptation are related to their broader worldviews and are correlated to their institution types.

The work highlights the major implications of adaptation decisions on ecosystem services (e.g., scenic beauty, carbon sequestration or wild plant supply) and equity (e.g., when dams benefit mostly urban and powerful actors). It also highlights the importance of power relationships in adaptation decision-making, as such relationships favor the values and knowledge of some stakeholders and give priority of their preferred adaptation options, for example technological options at the detriment of ecosystem-based options.